



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/814,933

03/30/2004

Nicholas I. Buchan

7929

7590  
G. Marlin Knight  
Hoyt & Knight  
PO Box 1320  
Pioneer, CA 95666

07/23/2007

EXAMINER

JOHNSON, CONNIE P

ART UNIT

PAPER NUMBER

1752

MAIL DATE

DELIVERY MODE

07/23/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/814,933

Applicant(s)

BUCHAN ET AL.

Examiner

Connie P. Johnson

Art Unit

1752

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 May 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 11-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 11-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 May 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/7/2007 has been entered.
2. The remarks and amendment filed 5/7/2007 have been entered and fully considered.
3. Claims 1-3 and 11-23 are presented.
  - a. Claims 4-10 are withdrawn.
  - b. Claims 11-23 are new.
  - c. Claims 1-3 are amended.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
5. Claims 19 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 19 and 20 are duplicate claims.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-3 are rejected under 35 U.S.C. 102(e) as being anticipated by Lille, U.S. Patent No. 6,725,526 B2.

Lille teaches a suspension assembly with a base, formed from silicon wafer (stiffener layer), a sacrificial layer (cushion layer), which is less stiff than the silicon wafer and subsequently formed over the silicon wafer. The silicon wafer may include silicon rubber. The assembly may also include a photoresist layer comprising elastomeric polydimethylsiloxane (transfer layer).

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1752

9. Claims 11-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lille (above) in view of Drake et al., U.S. Patent No. 6,200,882 B1.

Lille teaches a suspension assembly with a base, formed from silicon wafer (stiffener layer), a sacrificial layer (cushion layer), which is less stiff than the silicon wafer and subsequently formed over the silicon wafer. Lille also teaches a photoresist layer (transfer layer). Lille also teaches that the photoresist layer comprises polydimethylsiloxane (PDMS), wherein the PDMS is cured to crosslink the polymer after which the photoresist layer is removed from the wafer (col. 4, lines 58-67). Lille does not teach the thickness of the layers.

However, Drake teaches a mirror assembly with a silicon wafer base (see abstract). The assembly also comprises a substrate (stiffner layer) with a thickness of 75 to 600 microns (0.75 to 6.0mm) (col. 9, line 22). The substrate has an upper planar surface (cushion layer) with the same thickness as the substrate of 75 to 600 microns (.75 to 6.0 mm) (col. 9, line 24). The thickness of 75 to 600 microns meets the limitations of the thickness of 0.1 to 1.0mm for the substrate as in instant claim 14 and the cushion layer of instant claim 12. The reference also teaches that the mirror assembly comprises a PSG layer (transfer layer) on top of the substrate and upper layers with a thickness of 8 to 13 microns (col. 11, line 19). Drake also teaches a photoresist layer over the layers (col. 19, line 23-25). The mirror assembly is mounted on a suitable mounting tape (cover tape) (col. 19, line 11). Drake also teaches, in figure 1, a storage system comprising the mirror assembly wherein the mirror assembly is in a roll form in the storage system (see also column 6, lines 35-37). It would have been

obvious to one of ordinary skill in the art to use the layers of Lille with the thickness taught by Drake because Drake teaches the upper planar layer and substrate as being thicker to support the thinner, polysilicon layer.

### ***Response to Arguments***

10. Applicant's arguments filed 5/7/2007, with respect to the rejection(s) of claim(s) 1-3 under 102(e) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made herein.

11. Applicant argues that Lille does not teach a separable layer of photoresist.

Applicant is directed to column 4, lines 58-67 wherein Lille teaches a layer comprising polydimethylsiloxane is cured to crosslink the polymer and is removed from the wafer substrate by peeling the PDMS layer from the substrate.

### ***Conclusion***

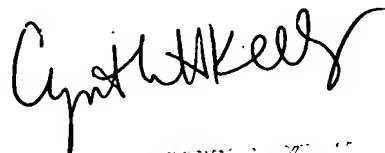
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Connie P. Johnson whose telephone number is 571-272-7758. The examiner can normally be reached on 7:30am-4:00pm Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1752

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Connie P. Johnson  
Examiner  
Art Unit 1752



CYNTHIA A. KELLY  
SUPERVISORY EXAMINER  
ELECTRONIC BUSINESS CENTER (EBC)